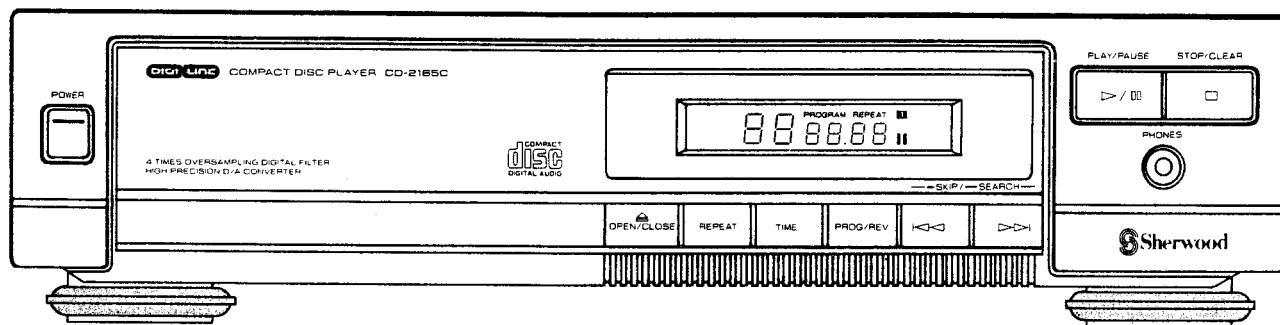


SERVICE MANUAL

CD-2165C

COMPACT DISC PLAYER



■ CONTENTS

Safety Precaution	2	Disc Mechanism Unit	18
Specifications	4	Optical Pick Up Head	20
Block Diagram	5	Exploded View	
Alignment Procedures	7	Cabinet & Chassis	21
P.C. Boards (Top & Bottom Views)	10	Disc Mechanism Unit	23
Electrical Parts List	14	Wiring Diagram	25
Mechanical Parts List		Schematic Diagram	Separate Sheet
Cabinet & Chassis	17		

 **Sherwood**

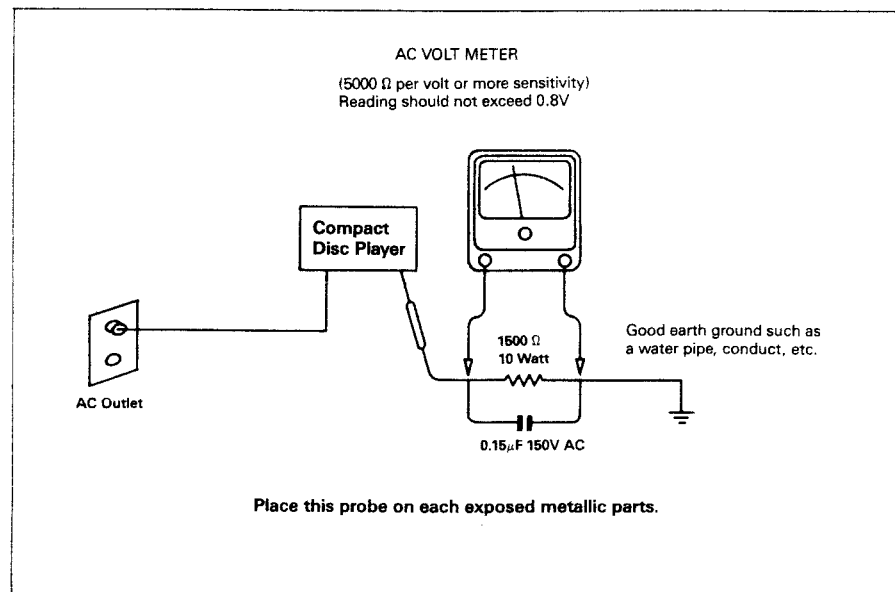
Safety Precaution

WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

- Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristic are identified in this manual and its supplements: electrical components having such features are identified by a Δ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.
- Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as

terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet. (Do not use a line isolation transformer during this check.) Use an AC voltmeter having 5000 Ω per volt or more sensitivity in the following manner:
Connect a 1500 Ω 10 watt resistor paralleled by a 0.15 μ F, 150V AC capacitor, between a known good earth ground (water pipe, conduct, etc) and the exposed metallic parts, one at a time. Measure The AC voltage across the combination of 1500 Ω resistor and 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



Laser Diode Properties & Caution

1. Laser diode properties

Material: AlGaAs semiconductor
Wave Length: 780nm
Emission Duration: Continuous
Laser Output: Maximum 0.4mW*
Classification: Class I

* This output is the value measured at a distance of about 1.6mm from the objective lens surface on the Optical pick-up block.

- During service, do not take the Optical pick-up block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical pick-up block (including APC board).

Cuations for Electrostatic Breakdown

1. Notes on handling the Optical pick-up block (KSS-150A).

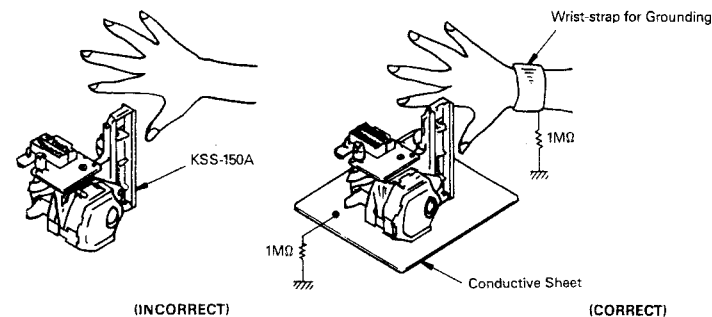
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc, on clothing and the human body. The printed matter below is included in the repair parts. During repair use the procedure in the printed matter. The following method is an example for reference purpose.

- Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping.)
- Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet.)
- Place your hands on the conductive sheet. (This makes them the same potential as the sheet.)
- Remove the optical pick-up block from the bag. (conductive.)
- Perform work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

2. Printed matter included in the repair parts

When opening or repairing a KSS-150A, the procedure for grounding as following is required to prevent damage caused by static electricity.

- Grounding for the human body
Be sure to put on a wrist-strap for grounding (with impedance lower than 1M ohm) whose others grounded. The strap works to drain away the static electricity build-up on the human body.
- Grounding for the work table
Be sure to lay on the table a conductive sheet with impedance lower than 1M ohm) such as a sheet of copper, Which is grounded.
- As static electricity build-up on clothes is not drained away, be careful not to let your clothes touch the KSS-150A.
- Handling the flexible board
The flexible board is easily damaged and should be handled with care.



Laser Diode Properties & Caution

1. Laser diode properties

Material: AlGaAs semiconductor
Wave Length: 780nm
Emission Duration: Continuous
Laser Output: Maximum 0.4mW*
Classification: Class I

* This output is the value measured at a distance of about 1.6mm from the objective lens surface on the Optical pick-up block.

2. During service, do not take the Optical pick-up block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical pick-up block (including APC board).

Cautions for Electrostatic Breakdown

1. Notes on handling the Optical pick-up block (KSS-150A).

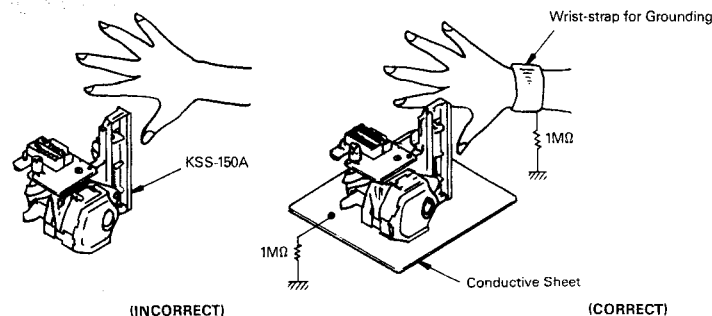
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc, on clothing and the human body. The printed matter below is included in the repair parts. During repair use the procedure in the printed matter. The following method is an example for reference purpose.

- 1) Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping.)
- 2) Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet.)
- 3) Place your hands on the conductive sheet. (This makes them the same potential as the sheet.)
- 4) Remove the optical pick-up block from the bag. (conductive.)
- 5) Perform work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

2. Printed matter included in the repair parts

When opening or repairing a KSS-150A, the procedure for grounding as following is required to prevent damage caused by static electricity.

- 1) Grounding for the human body
Be sure to put on a wrist-strap for grounding (with impedance lower than 1M ohm) whose others grounded. The strap works to drain away the static electricity build-up on the human body.
- 2) Grounding for the work table
Be sure to lay on the table a conductive sheet with impedance lower than 1M ohm) such as a sheet of copper, which is grounded.
- 3) As static electricity build-up on clothes is not drained away, be careful not to let your clothes touch the KSS-150A.
- 4) Handling the flexible board
The flexible board is easily damaged and should be handled with care.



Specifications

Typical Audio Performance

Number of channels	2
Frequency Range	2-20,000Hz ± 0.5dB
Signal to Noise Ratio	More than 93dB
Dynamic Range	More than 96dB
Total Harmonic Distortion	Less than 0.07% at 1kHz
Wow and Flutter	Quartz crystal precision
Audio Output Level	2 volts RMS

Optical Readout System

Laser	Semiconductor AlGaAs
Wave Length	760 ~ 800 nm
Numerical Aperture	0.45

Signal Format

Sampling Frequency	176.4 kHz
D/A Conversion	16 bit 4 times oversampling with digital filter

Disc

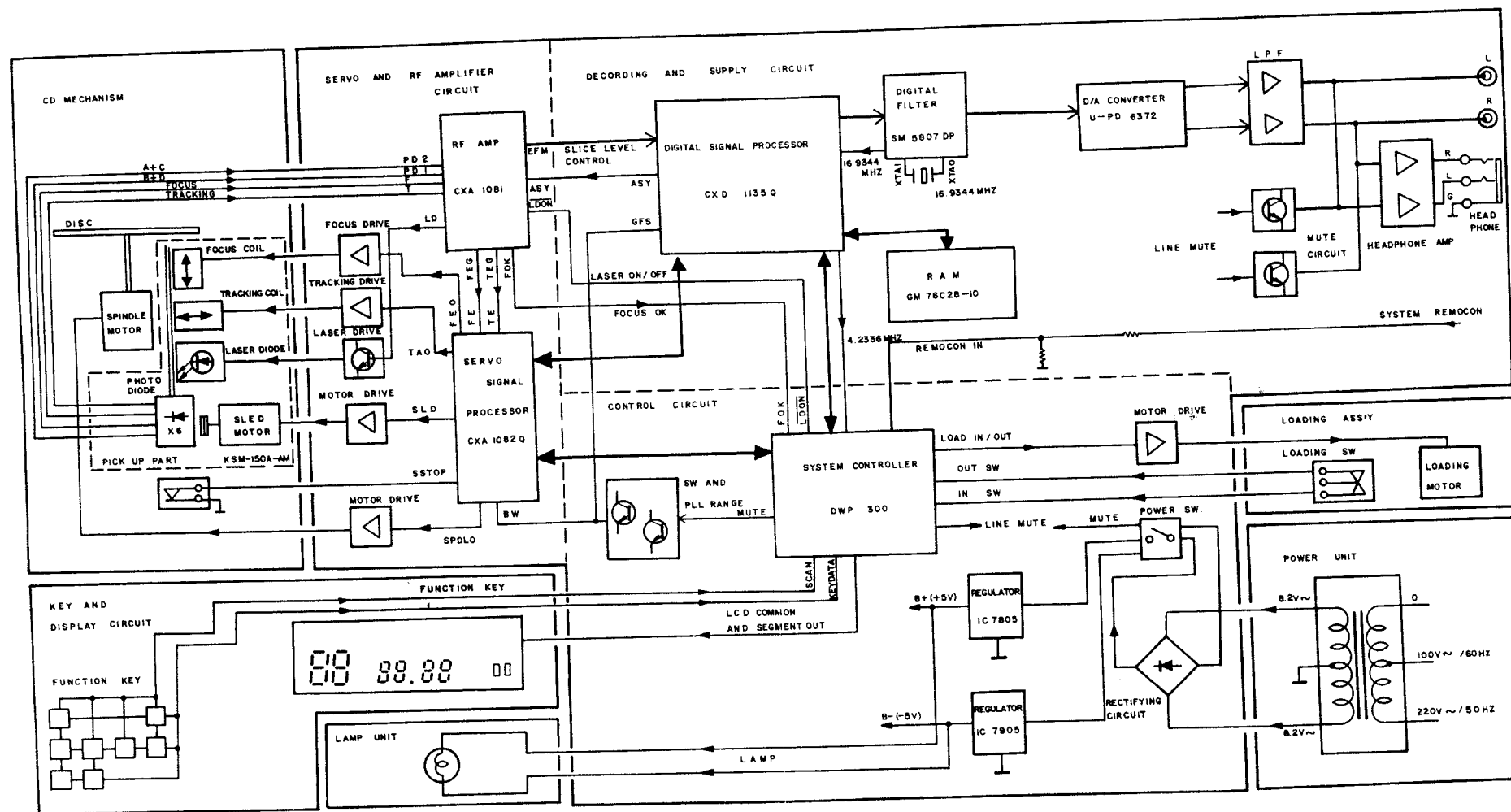
Diameter	120 mm/80 mm
Thickness	1.2 mm
Rotation Speed	500-200 rpm
Playing Time (Theoretical)	74 min (stereo)
Track Pitch	1.6μF
Material	Plastic

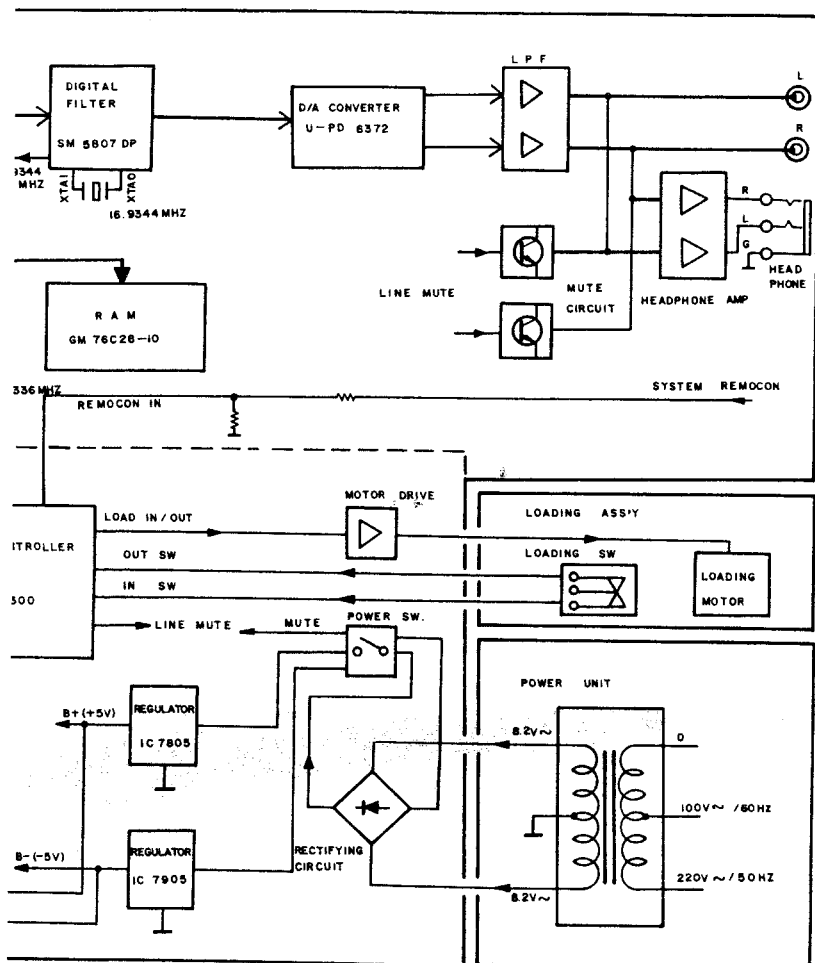
General

Power Supply Voltage	See type plate at the rear of the player.
Power Consumption	13.5W approx.
Power Requirements:	
A:	120V 60Hz for American/Canadian version
B:	120/220V, 60/50Hz for multi-voltage version (switchable)
C:	220V 50Hz for general European version
D:	220V 50Hz for Germanian/Italian version
E:	240V 50Hz for U.K./Austalian version
F:	220V 50Hz for Swiss/Scandinavian version
Dimensions (W×H×D)	17.3×2.8×9.6 inch 440×70×245 mm
Weight (Net)	3.8 kg (8 lbs, 5.76 oz)

Note: Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the American (A) standard, and provides information on regional circuit modification through use of alternate schematic diagram or wiring diagram, and information on regional component variations through use of parts list. Design and Specifications subject to change without notice for improvement.

Block Diagram





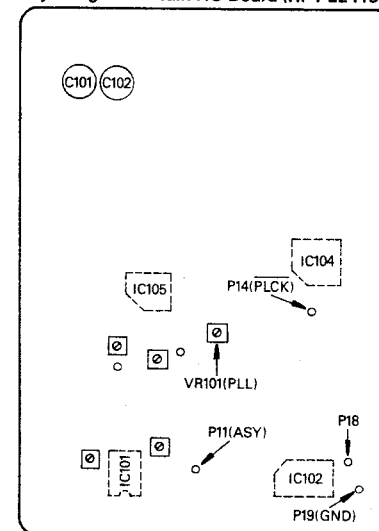
Alignment Procedures

1. Before Starting Adjustments

- Make the adjustment with a numeric order.
- Use the dualtrace oscilloscope with high impedance (more than 10M ohm)
- Test Disc : SONY YEDS-7, SONY YEDS-4
- How to enter into the TEST MODE.
 - 1) Power off.
 - 2) Short between Pin 18 and Pin 19 on the Main P.C Board.
 - 3) Power on.
 - 4) Repair the short between Pin 18 and Pin 19
 - 5) Then, "0" signal appears in the display panel and "0" signal means the TEST MODE 0.
 - 6) If you press the PLAY button for an instant, the TEST MODE changes to the TEST MODE 1.
 - 7) If you press the PLAY button again, the TEST MODE changes to the TEST MODE 2.
- Tentative Setting of Volume
 - Set the semi-fixed resistance tentatively as follows;

VR 101 (PLL Free Run)	Center Position
VR 102 (F. Bias)	Center Position
VR 103 (EF. Balance)	Center Position
VR 104 (F. Gain)	Turn to the first counterclockwise
VR 105 (T. Gain)	Turn to the end counterclockwise

Adjusting Part: Main P.C Board (RF PLL Free Run)

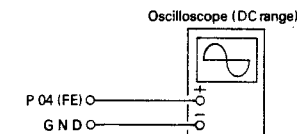


TOP VIEW (Front Side)

2. RF PLL Free Run Adjustments

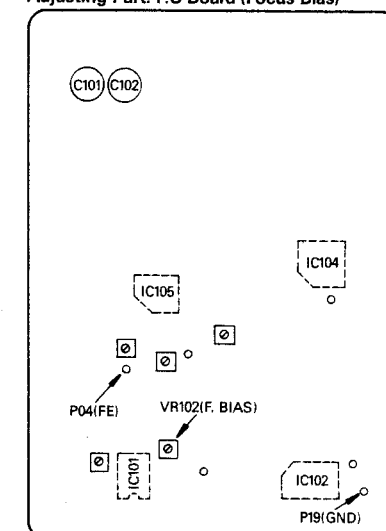
- 1) Enter into the TEST MODE 0.
- 2) Earth Pin 11 (ASY) on the Main P.C Board.
- 3) Connect the frequency counter to between Pin 14 (PLCK) and Pin 19 (GND) by using a probe.
- 4) Adjust VR 101 (PLL) with a plastic screwdriver for getting a indication in the range of 4.3218 MHz on the frequency counter.
- 5) Remove the earth connection from Pin 11 (ASY).
- 6) Set the player to TEST MODE 2, and confirm the PLL frequency is 4.3218 MHz.

3. Focus Bias Adjustments



- 1) Enter into the TEST MODE 0.
- 2) Connect an oscilloscope between Pin 04 (FE. Focus Error) and Pin 19 (GND) on the Main P.C Board.
- 3) Adjust VR102 (F. Bias) so that the focus error signal becomes $0V \pm 10mV$ on the oscilloscope.

Adjusting Part: P.C Board (Focus Bias)



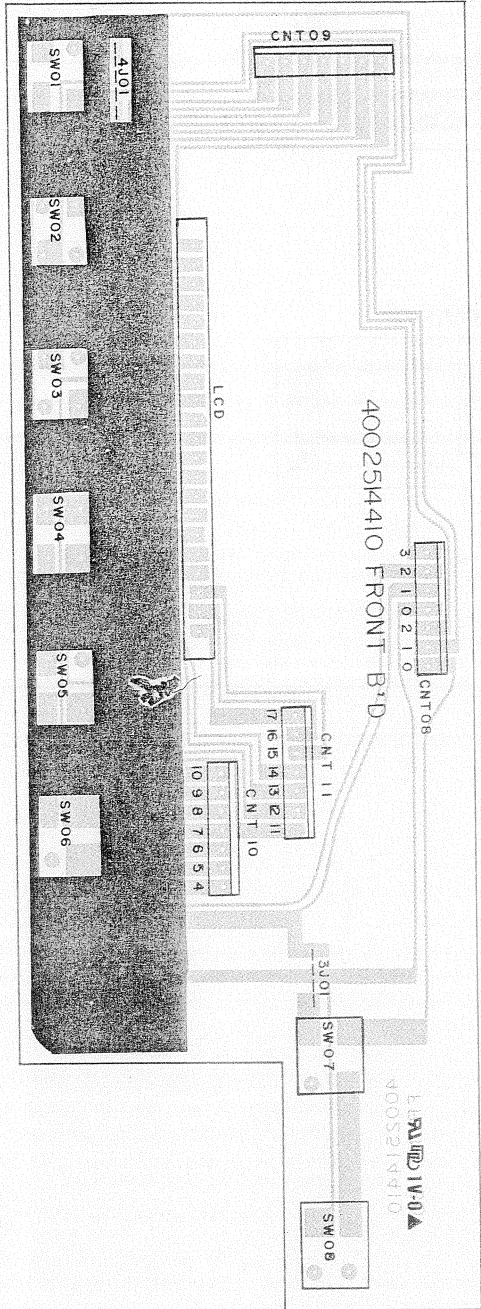
TOP VIEW (Front Side)

(TOP VIEW)

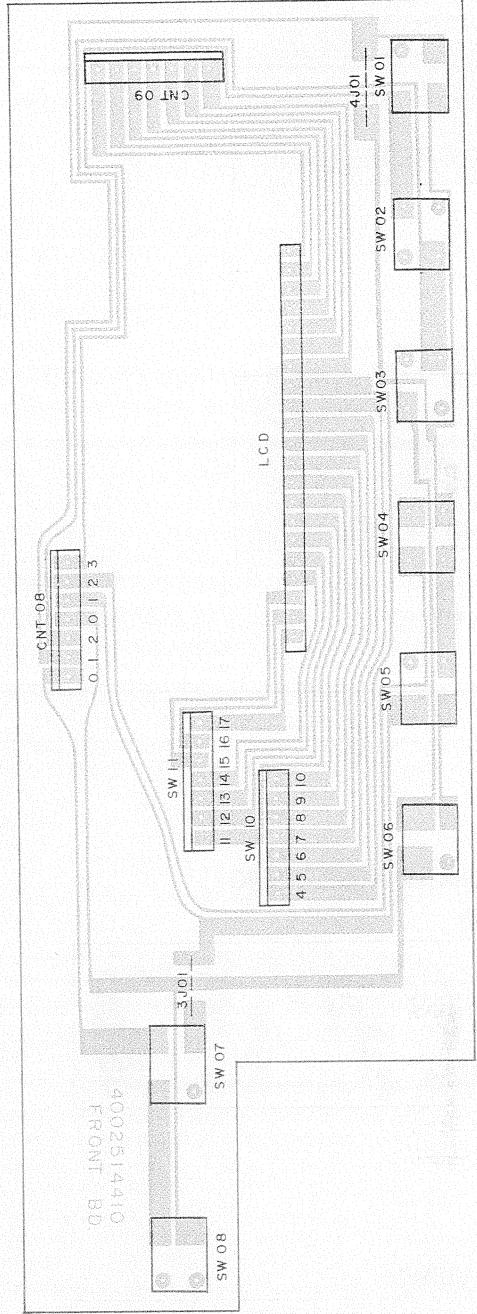


FRONT BOARD 4002514410

(TOP VIEW)

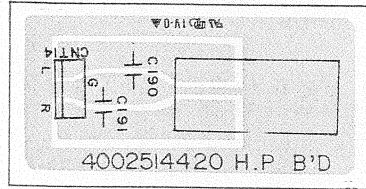


(BOTTOM VIEW)

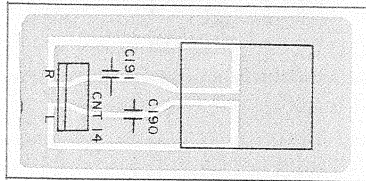


H.P BOARD 4002514420

(TOP VIEW)

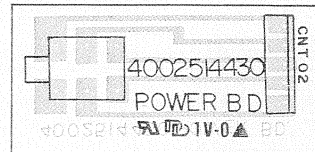


(BOTTOM VIEW)

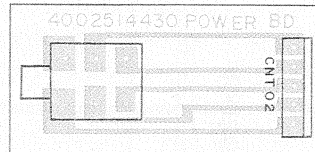


POWER BOARD 4002514430

(TOP VIEW)

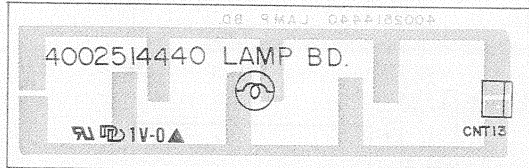


(BOTTOM VIEW)

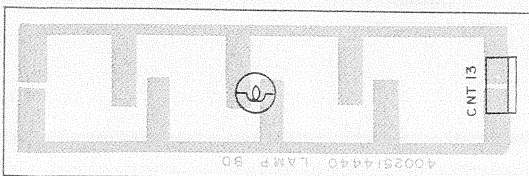


LAMP BOARD 4002514440

(TOP VIEW)



(BOTTOM VIEW)



Electrical Parts List

PRODUCT SAFETY NOTICE: Products marked with a Δ have special character important to safety. If you replace any of these components, carefully the product safety notice of this manual. Don't degraded the safety of product through improper servicing.

Resistors & Capacitors tolerance, D: $\pm 5\%$, J: $\pm 0.5\%$, K: $\pm 10\%$, M: $\pm 20\%$, Z: $+80\%$, -20% .

Ref. No.	Part No.	Description	Position	Remark
Main Board 4002514400				
Capacitors				
C101	3408222239	Electric SA 2200 μ F 16V M	D4	
C102	3408210239	Electric SA 1000 μ F 16V M	D3	
C103	3679332120	Mylar 0.0033 μ F 100V J	E1	
C104-C106		Not used !		
C107	3408210149	Electric SA 100 μ F 25V M	D3	
C108	3579103530	Ceramic 0.01 μ F 50V Z	D2	
C109	3679332120	Mylar 0.0033 μ F 100V J	E1	
C110	3609102120	Mylar 0.001 μ F 100V J	D2	
C111	3609683122	Mylar 0.068 μ F 100V J	D2	
C112/C113	3479247021	Electric SA 47 μ F 10V M	D2	
C114/C115	3679152120	Mylar 0.0015 μ F 100V J	D2	
C116/C117	3479247021	Electric SA 47 μ F 10V M	D2	
C118	3609102120	Mylar 0.001 μ F 100V J	D2	
C119	3579103530	Ceramic 0.01 μ F 50V Z	D2	
C120	3609683122	Mylar 0.068 μ F 100V J	D2	
C121/C122	3479247021	Electric SA 47 μ F 10V M	D1	
C123	3579103530	Ceramic 0.01 μ F 50V Z	D1	
C124	3479247021	Electric SA 47 μ F 10V M	D2	
C125/C126	3479247021	Electric SA 47 μ F 10V M	D1	
C127/C128	3479210071	Electric SA 10 μ F 50V M	E1	
C129-C131	3479247021	Electric SA 47 μ F 10V M	E1	
C132	3579103530	Ceramic 0.01 μ F 50V Z	E1	
C133/C134	3479210071	Electric SA 10 μ F 50V M	D1	
C135/C136	3579101230	Ceramic 100pF 50V K	D1	
C137	3679153120	Mylar 0.015 μ F 100V J	C3	
C138	3479222041	Electric SA 22 μ F 25V M	C3	
C139	3479233971	Electric SA 3.3 μ F 50V M	C3	
C140	3479210971	Electric SA 1 μ F 50V M	C3	
C141	3679472120	Mylar 0.0047 μ F 100V J	C3	
C142	3479247971	Electric SA 4.7 μ F 50V M	C3	
C143	3479247021	Electric SA 47 μ F 10V M	C2	
C144/C145	3579103530	Ceramic 0.01 μ F 50V Z	C2	
C146	3479233971	Electric SA 3.3 μ F 50V M	C3	
C147	3609104122	Mylar 0.1 μ F 100V J	C3	
C148	3679332230	Mylar 0.047 μ F 100V J	C3	
C149	3609104122	Mylar 0.1 μ F 100V J	B3	
C150	3479247021	Electric SA 47 μ F 10V M	C3	
C151/C152	3529180120	Ceramic 18pF 50V J	C1	
C153/C154	3479247021	Electric SA 47 μ F 10V M	B1	
C155	3479247021	Electric SA 47 μ F 10V M	B3	
C156	3679333120	Mylar 0.033 μ F 100V J	B3	
C157	3579102230	Ceramic 0.001 μ F 50V K	B3	
C158	3579247871	Electric SA 0.47 μ F 50V M	B2	
C159	3679222120	Mylar 0.0022 μ F 100V J	B3	
C160		Not used !		
C161	3479247021	Electric SA 47 μ F 10V M	C3	
C162	3479247871	Electric SA 0.47 μ F 50V M	A3	
C163	3679103120	Mylar 0.01 μ F 100V J	A3	
C164	3679333120	Mylar 0.033 μ F 100V J	A2	
C165	3679103120	Mylar 0.01 μ F 100V J	A3	
C166	3479247021	Electric SA 47 μ F 10V M	C1	
C167	3579103530	Ceramic 0.01 μ F 50V Z	C1	
C168	3479247071	Electric SA 47 μ F 10V M	A4	
C169	3679222120	Mylar 0.0022 μ F 100V J	A4	

Ref. No.	Part No.	Description	Position	Remark
C170	3479247021	Electric SA 47 μ F 10V M	A4	
C171	3679222120	Mylar 0.0022 μ F 100V J	A3	
C172	3579120130	Ceramic 12pF 50V J	A3	
C173	3479210071	Electric SA 10 μ F 50V M	E2	
C174	3479210071	Electric SA 10 μ F 50V M	E2	
C175	3679333120	Mylar 0.033 μ F 100V J	E2	
C176	3479247021	Electric SA 47 μ F 10V M	C3	
C177		Not used !		
C178	3479247871	Electric SA 0.47 μ F 50V M	B2	
C179	3579103530	Ceramic 0.01 μ F 50V Z	B3	
C180/C181	3579101230	Ceramic 100pF 50V K	C4	
C182		Not used !		
C183/C184	3579473530	Ceramic 0.047 μ F 50V Z	E4	
C185	3479210071	Electric SA 10 μ F 50V M	C2	
C186	3479247021	Electric SA 47 μ F 10V M	C2	
C187/C188	3579103530	Ceramic 0.01 μ F 50V Z	B3/A1	
Connectors				
CNT01	3458103207	Ass'y 3P To Transformer	E4	
CNT02	4428506910	Plug 5P Power Switch	E3	
CNT03	4428515410	Plug 4P B4B-PH Actuator	C4	
CNT04	4428515410	Plug 4P B4B-PH Motor	C4	
CNT05	4428506910	Plug 5P Leaf Switch	B4	
CNT06	4428515410	Plug 4P Laser Diode	A4	
CNT07	4428515510	Plug 8P Photo Diode	A4	
CNT08	4428505410	Plug 7P Key Data	B1	
CNT09	4428505410	Plug 7P LCD A	A2	
CNT10	4428505410	Plug 7P CDP B	A2	
CNT11	4428505410	Plug 7P LCD C	A1	
CNT12		Not used !		
CNT13	4428505720	Plug 2P Lamp	C3	
CNT14	4428505710	Plug 3P Headphone	D1	
CNT15	4428511110	Plug 2P System Remocon	C2	
Coils				
L101	2648001450	10 μ H	A4	
L102	3838101500	X-TAL 16.9344 MHz	C1	
Diodes				
D101	2058599106	DZ 6.8BH, Zener	D3	
D102	2058599106	DZ 6.8BH, Zener	E3	
D103	2058306101	1N4148 Switch	E2	
D104/D105		Not used !		
D106	2058306101	1N4148 Switch	E2	
D107	2058306101	1N4148 Switch	E3	
ICs				
IC101	2138022105	CXA108M RF AMP	A3	
IC102	2138022102	DWP300A CPU	A2	
IC103	2138099113	SM 5807	C1	
IC104	2138022104	CXD1135Q DSP	C2	
IC105	2138022103	CXA108Z SSP	C3	
IC106	2168000114	MC4558 OP AMP	B4	
IC107	2138400121	76C28-10 S-RAM	C1	

Ref. No.	Part No.	Description	Position	Remark
IC108	2168000114	MC4558 Buffer	E1	
IC109	2138013131	NEC6372	D1	
IC110	2168000114	MC4558 OP AMP	D2	
IC111	2168001101	GD7805 5V Regulator	D4	
IC112	2168000105	MC7905-5V Regulator	D3	
Resistors: All Resistors are 1/5W carbon film. $\pm 5\%$ tolerance, unless otherwise specified. M is metal film, M.O is metal oxide and C is cement type.				
R101/R102	3069121270	M, 1200 1/4W	E3	
R103-R105	3069103970	10k Ω	E2	
R106	3069104970	100k Ω	E3	
R107	3069474970	470k Ω	D3	
R108	3069104970	100k Ω	E2	
R109	3069102970	1k Ω	E2	
R110	3069181970	1800	D2	
R111	3069332970	3.9k Ω	D2	
R112/R113	3069512970	5.1k Ω	D2	
R114	3069272970	2.7k Ω	D2	
R115	3069471970	470 Ω	D2	
R116	3069272970	2.7k Ω	D2	
R117	3069104970	100k Ω	E2	
R118/R119	3069512970	5.1k Ω	D2	
R120	3069332970	3.9k Ω	D2	
R121	3069181970	1800	D2	
R122	3069474970	470k Ω	D2	
R123	3069471970	470 Ω	D2	
R124/R125	3069682970	6.8k Ω	E2	
R126/R127	3069103970	10k Ω	E2	
R128/R129	3069104970	100k Ω	D1	
R130	3069102970	1k Ω	E1	
R131/R132	3069104970	100k Ω	E1	
R133	3069102970	1k Ω	E1	
R134	3069473970	47k Ω	E1	
R135	3069512970	5.1k Ω	D1	
R136/R137	3069121970	1200	D1	
R138	3069512970	5.1k Ω	D1	
R139	3069102970	1k Ω	E2	
R140	3069124970	120k Ω	C3	
R141	3069822970	8.2k Ω	C3	
R142	3069153970	15k Ω	C3	
R143/R144	3069104970	100k Ω	C3	
R145	3069101970	100 Ω	C2	
R146/R147	3069822970	8.2k Ω	C3	
R148	3069104970	100k Ω	C4	
R149	3069473970	47k Ω	C3	
R150/R151	3069104970	100k Ω	C2	
R152/R153	3069103970	10k Ω	C2	
R154	3069472970	4.7k Ω	B4	
R155	3069473970	47k Ω	B3	
R156	3069124970	120k Ω	C3	
R157	3069362970	3.6k Ω	B2	
R158	3069103970	10k Ω	B3	
R159	3069104970	100k Ω	B2	
R160	3069103970	10k Ω	B2	
R161	3069102970	1k Ω	B2	
R162	3069203970	20k Ω	B2	
R163	3069561970	560 Ω	B2	
R164	3069512970	5.1k Ω	B4	
R165-R168	3069104970	100k Ω	B4	
R169/R170	3069472970	4.7k Ω	B3	
R171	3069102970	10k Ω	B3	
R172	3069105970	1M Ω	B3	

Ref. No.	Part No.	Description	Position	Remark
R173-R176	3069273970	27kΩ	B1	
R177/R178	3069103970	10kΩ	B1	
R179	3069101970	100Ω	B4	
R180	3069223970	22kΩ	B4	
R181/R182	3069333970	33kΩ	B2/B1	
R183/R186	-	Not used !		
R184/R185	3069104970	100kΩ	A3/A2	
R187	3069103970	10kΩ	A1	
R188	3069101970	100Ω	A4	
R189	3069223970	22kΩ	A2	
R190	3069229970	22Ω	A4	
R191	3069183970	18kΩ	A3	
R192	3069103970	10kΩ	A3	
R193	3069392970	3.9kΩ	A3	
R194-R196	3069153970	15kΩ	A2	
R197	3069682970	6.8kΩ	A2	
R198	3069223970	22kΩ		
R199-R202	-	Not used !		
R203/R204	3069681970	680Ω	C1	
R205	3069479970	4.7Ω	C3	
R206	3069222970	2.2kΩ	B2	
R207	-	Not used !		
R208/R209	3069681970	680Ω	C1	
R210	3069223970	22kΩ	A2	
VR101	3248310220	Semi 1k PLL adj	B3	
VR102	3248347320	Semi 47k F. Bias adj	A3	
VR103	3248322320	Semi 22k EF. BAL adj	B4	
VR104	3248322320	Semi 22k F. Gain adj	B3	
VR105	3248322320	Semi 22k T. Gain adj	B3	
Transistors				
Q101	2008609101	MPS A05 NPN	B4	
Q102	2008209101	MPS A55 PNP	B4	
Q103	2008609101	MPS A05 NPN	B4	
Q104	2008209101	MPS A55 PNP	B4	
Q105	2008609101	MPS A05 NPN	C4	
Q106	2008209101	MPS A55 PNP	C4	
Q107	2008209101	MPS A55 PNP	C4	
Q108	2008609101	MPS A05 NPN	C4	
Q109	2008609101	MPS A05 NPN	C4	
Q110	2008209101	MPS A55 PNP	C4	
Q111	2208622109	DTL 144E NPN	C3	
Q112	2208622109	DTL 144E NPN	C3	
Q113	2008206111	KTA 966A NPN	A4	
Q114	2008610102	2SD 1302S NPN	D3	
Q115	2008610102	2SD 1302S NPN	E2	
Q116	2008610102	2SD 1302S NPN	E2	
Front Board 4002514410				
Connectors				
CNT08	4358107201	Ass'y 7P To Main Board 200mm		
CNT9	4358107202	Ass'y 7P To Main Board 200mm		
CNT10	4358107180	Ass'y 7P To Main Board 180mm		
CNT11	4358107260	Ass'y 7P To Main Board 260mm		
Other				
LCD	2338279948	LCD SLC 8015B RSN C3		

Ref. No.	Part No.	Description	Position	Remark
IC108	2168000114	MC4558 Buffer	E1	
IC109	2138013131	NEC6372	D1	
IC110	2168000114	MC4558 OP AMP	D2	
IC111	2168601101	GD7805 5V Regulator	D4	
IC112	2168600105	MC7905-5V Regulator	D3	
Resistors: All Resistors are 1/5W carbon film $\pm 5\%$ tolerance, unless otherwise specified. M is metal film, M.O is metal oxide and C is cement type.				
R101/R102	3069121270	M, 120 Ω 1/4W	E3	
R103-R105	3069103970	10k Ω	E2	
R106	3069104970	100k Ω	E3	
R107	3069474970	470k Ω	D3	
R108	3069104970	100k Ω	E2	
R109	3069102970	1k Ω	E2	
R110	3069181970	180 Ω	D2	
R111	3069392970	3.9k Ω	D2	
R112/R113	3069612970	5.1k Ω	D2	
R114	3069272970	2.7k Ω	D2	
R115	3069471970	470 Ω	D2	
R116	3069272970	2.7k Ω	D2	
R117	3069104970	100k Ω	E2	
R118/R119	3069512970	5.1k Ω	D2	
R120	3069392970	3.9k Ω	D2	
R121	3069181970	180 Ω	D2	
R122	3069474970	470k Ω	D2	
R123	3069471970	470 Ω	D2	
R124/R125	306962970	6.8k Ω	E2	
R126/R127	3069103970	10k Ω	E2	
R128/R129	3069104970	100k Ω	D1	
R130	3069102970	1k Ω	E1	
R131/R132	3069104970	100k Ω	E1	
R133	3069102970	1k Ω	E1	
R134	3069473970	47k Ω	D1	
R135	3069512970	5.1k Ω	D1	
R136/R137	3069121970	120 Ω	D1	
R138	3069512970	5.1k Ω	D1	
R139	3069102970	1k Ω	E2	
R140	3069124970	120k Ω	C3	
R141	3069222970	8.2k Ω	C3	
R142	3069153970	15k Ω	C3	
R143/R144	3069104970	100k Ω	C3	
R145	3069101970	100 Ω	C2	
R146/R147	306923970	82k Ω	C3	
R148	3069104970	100k Ω	C4	
R149	3069473970	47k Ω	C3	
R150/R151	3069104970	100k Ω	C2	
R152/R153	3069103970	10k Ω	C2	
R154	3069472970	4.7k Ω	B4	
R155	3069473970	47k Ω	B3	
R156	3069124970	120k Ω	C3	
R157	3069362970	3.6k Ω	B3	
R158	3069103970	10k Ω	B2	
R159	3069104970	100k Ω	B2	
R160	3069103970	10k Ω	B2	
R161	3069102970	1k Ω	B2	
R162	306923970	20k Ω	B2	
R163	3069561970	560 Ω	B2	
R164	3069512970	5.1k Ω	B4	
R165-R168	3069104970	100k Ω	B4	
R169/R170	3069472970	4.7k Ω	B3	
R171	3069102970	10k Ω	B3	
R172	3069105970	1M Ω	B3	

Ref. No.	Part No.	Description	Position	Remark
R173-R176	3069273970	27k Ω	B1	
R177/R178	3069103970	10k Ω	B1	
R179	3069101970	100 Ω	B4	
R180	3069223970	22k Ω	B4	
R181/R182	3069393970	39k Ω	B2/B1	
R183/R186	.	Not used !		
R184/R185	3069104970	100k Ω	A3/A2	
R187	3069103970	10k Ω	A1	
R188	3069101970	100 Ω	A4	
R189	3069223970	22k Ω	A2	
R190	306922970	22 Ω	A4	
R191	3069183970	18k Ω	A3	
R192	3069103970	10k Ω	A3	
R193	3069392970	3.9k Ω	A3	
R194-R196	3069153970	15k Ω	A2	
R197	3069682970	6.8k Ω	A2	
R198	3069223970	22k Ω		
R199-R202	.	Not used !		
R203/R204	3069681970	680 Ω	C1	
R205	3069473970	4.7k Ω	C3	
R206	3069222970	2.2k Ω	B2	
R207	.	Not used !		
R208/R209	3069681970	680 Ω	C1	
R210	3069223970	22k Ω	A2	
VR101	3248310220	Semi 1k PLL adj	B3	
VR102	3248347320	Semi 47k F. Bias adj	A3	
VR103	3248322320	Semi 22k EF. BAL adj	B4	
VR104	3248322320	Semi 22k F. Gain adj	B3	
VR105	3248322320	Semi 22k T. Gain adj	B3	
Transistors				
Q101	2008609101	MPS A05 NPN	B4	
Q102	2008209101	MPS A55 PNP	B4	
Q103	2008609101	MPS A05 NPN	B4	
Q104	2008209101	MPS A55 PNP	B4	
Q105	2008609101	MPS A05 NPN	C4	
Q106	2008209101	MPS A55 PNP	C4	
Q107	2008209101	MPS A55 PNP	C4	
Q108	2008609101	MPS A05 NPN	C4	
Q109	2008609101	MPS A05 NPN	C4	
Q110	2008209101	MPS A55 PNP	C4	
Q111	2208622109	DTC 144E NPN	C3	
Q112	2208622109	DTC 144E NPN	C3	
Q113	2008206111	KTA 966A NPN	A4	
Q114	2008610102	2SD 1302S NPN	D3	
Q115	2008610102	2SD 1302S NPN	E2	
Q116	2008610102	2SD 1302S NPN	E2	
Front Board 4002514410				
Connectors				
CNT08	4358107201	Ass'y 7P To Main Board 200mm		
CNT9	4358107202	Ass'y 7P To Main Board 200mm		
CNT10	4358107180	Ass'y 7P To Main Board 180mm		
CNT11	4358107250	Ass'y 7P To Main Board 250mm		
Other				
LCD	2338279948	LCD SLC 60158 RSN C3		

Ref. No.	Part No.	Description	Position	Remark
Headphone Board 4002514420				
Capacitors				
C190	3579332530	Ceramic 0.0033 μ F 50V Z		
C191	3579332530	Ceramic 0.0033 μ F 50V Z		
CNT14	4358103207	Ass'y 3P To Main Board		
Power SW Board 4002514430				
Connectors				
CNT02	4358105500	Ass'y 5P 5264-5395 DL UL#26 500 To Main Board 500mm		
Lamp Board 4002514440				
Connectors				
LAMP	2528204410	LAMP 9.6V 120mA		
CNT13	4358102200	Ass'y 2P 5264-5395 DL UL#26 To Main Board 200mm		
Trans Board 4002514000				
Others				
△ D901-D904	2258106100 4225001410 4255000410	1N4002, Diode Terminal Solder Clip Fuse x 4		
△ Trans-formers	2828070804 2828070504 2828068404 2828072504	Power Transformer Power Transformer Power Transformer Power Transformer	Domestic/B A C,D,F E	
Fuses				
△ F201	5508211230 5508210890	NB 31.8mm 250mA 250V NB 31.8mm 150mA 250V for 220V version	A	
△ (F201)	5508211230	NB 31.8mm 250mA 250V for 100/220V version	Domestic/ B	
△ (F201)	5508301034 5508300835	TL 20mm 160mA 250V TL 20mm 125mA 250V	Domestic/ B C,D,F E	
Others				
CNT03	4358204160	Ass'y 5P from Motor to Main Board		
CNT05	4358105202	Ass'y 5P from Leaf Switch		
CNT15	4428511220	Ass'y 2P from System Remoon/ Chassis Back		
.	4358508201	Ass'y 8P from Mechanism to Cnt 07		
.	4358208240	Ass'y 4P from Mechanism to Cnt 04		
.	4358208240	Ass'y 4P from Mechanism to Cnt 06		

Mechanical Parts List (Cabinet & Chassis)

No.	Parts No.	Description	Q'ty	Position	Remark
1	046122019631	Cover Top, Jack	1	C4	
2	6121604610	Chassis Main	1	E3	
3	048035102111	Foot Base, Gold	4	D4,C3	
4	6725002310	Cushion Foot, Black	4	D4,C3	
5	6705004210	Spacer	2	E4	
6	046102026511	Chassis Back, Black	1	E6	Domestic
	046102026521	Chassis Back, Black	1	E6	A
	046102026531	Chassis Back, Black	1	E6	B
	046102026541	Chassis Back, Black	1	E6	C
	046102026551	Chassis Back, Black	1	E6	D
	046102026561	Chassis Back, Black	1	E6	E
	046102026571	Chassis Back, Black	1	E6	F
7	4308000810	Cord AC Power, Black	1	F5	Domestic
	4308000910	Cord AC Power, Black	1	F5	A,B
	4308000430	Cord AC Power, Black	1	F5	C,D,F
	43080003610	Cord AC Power, Black	1	F5	E
8	6513000310	Stopper Cord, Black	1	E6	Domestic
	6518000111	Stopper Cord, Black	1	E6	
9	4618000410	Voltage Selector	1	D5	Domestic, B
10	6515000630	Holder Voltage	1	E6	Domestic, B
11		Not used !			
12	4428300310	Adapter AC	1	F5	Domestic
13	048501015511	Panel Front, Black	1	A3	Domestic
	048501015521	Panel Front, Black	1	A3	
14	048545064411	Power Knob, Main	1	A2	
15	6555000710	Spring Button, Power	1	A2	
16	048543024111	Button Function	1	B2	
17	048543023713	Button Tact	1	C1	
18	63050005210	Button Shaft	1	A3	
19	048555027311	Window Display	1	A2	
20	4438102810	RCA Jack Board	1	E3	
21	60630002810	Holder Lamp	1	C3	
22	60630002810	Diffuser	1	C3	
23	85350023830	Tact Switch	1	B2	
24	46580002020	Plate Cover	1	D2	
25	4835016110	Plate Cover	1	D2	
26	6725002720	Buffer	1	B5	
27	4628048810	Push Switch	8	B5	
28	44380004420	Head Phone Jack	1	C1	
29	6308000610	Washer	1	C1	
30	048563003911	Door Disc Tray	1	B3	
31	5708007210	Drive Mecha/KSM-150A-AM	1	C4	
32	055708000074	C.D.Mechanism Ass'y	1	C4	
Screws					
S1	8158440083	WSMAM 4x8 ZNB	6		
S2	8119230083	#2PTC 3x8 ZNB	12		
S3	8158230081	#2 WPTC 3x8 ZNY	9		
S4	8108230081	#2 BTC 3x8 ZNY	18		
S5	8155000710	Ground	2		
S6	8158430061	#3 WPS 3x6 ZNY	3		

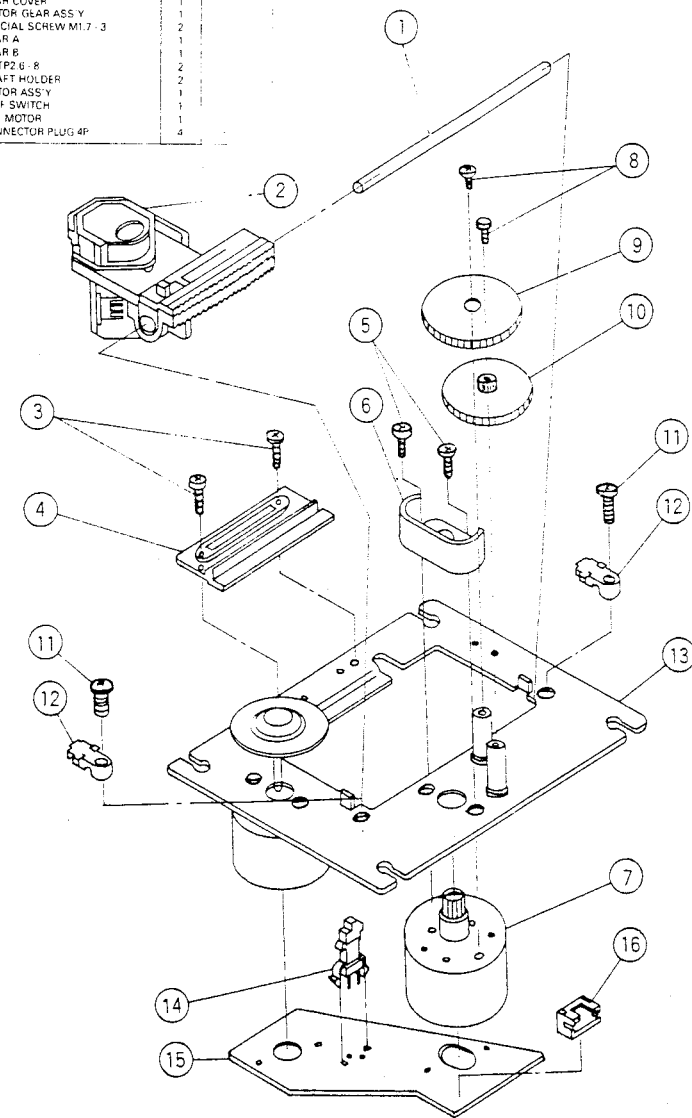
Mechanical Parts List (Disc Mechanism Unit)

No.	Part No.	Description	Q'ty	Remark
1	056123600110	Ass'y Base ILU	1	
2	056123600210	Ass'y Chassis IDU	1	
3	056125600120	Ass'y Locker	1	
4	6163107210	Cover Gear	1	
5	6505093010	Bracket Hinge	1	
6	6163107310	Cover Magnet	1	
7	6123619810	Chassis Chuck	1	
8	6545000410	Hinge Mecha	1	
9	6143000910	Guide Tray, Left	1	
10	6143001010	Guide Tray, Right	1	
11	70150003910	Bushing Locker	1	
12	6021800210	Tray Disc, Black	1	
13	7113001310	Pulley Motor	1	
14	7113001410	Pulley Gear	1	
15	7103000410	Gear Center	1	
16	7101000110	Gear Loading	1	
17	7141000120	CAM Control	1	
18	6512001510	Holder Tray, Front	2	
19	6512001610	Holder Tray, Back	2	
20	6032000110	Leg ILU, φ3	1	
21	6032000120	Leg ILU, φ3x4L	1	
22	6032000130	Leg ILU, φ4	1	
23	6062100610	Base Magnet, Black	1	
24	7003000320	Shaft Damping	4	
25	6063102410	Cover Shaft	4	
26	6065103210	Rolling Cap	1	
27	6063102510	Base Locker	1	
28	6713000310	Rubber Damping	4	
29	7165002210	Belt	1	
30	5125000910	Magnet	1	
31	6555008310	Spring, Front	2	
32	6555008410	Spring, Back	2	
33	4003511000	Motor-PCB	1	
34	5558001810	Motor Loading	1	
35	4648501010	Switch Leaf	1	
36	6705011010	Sponge Cover	1	
37	6705011110	Sponge Tray	2	
38	5708007210	Drive Ass'y, Pick up	1	
39	8305005110	Washer Gear	2	
40	8309030011	Washer Plain φ4 ZNY	1	
41	4428513450	L Angle Wafer 5268-05	1	
42	4428513430	L Angle Wafer 5268-03	1	
Screws				
S1	8109630101	#2BT 3x10 ZNY	5	

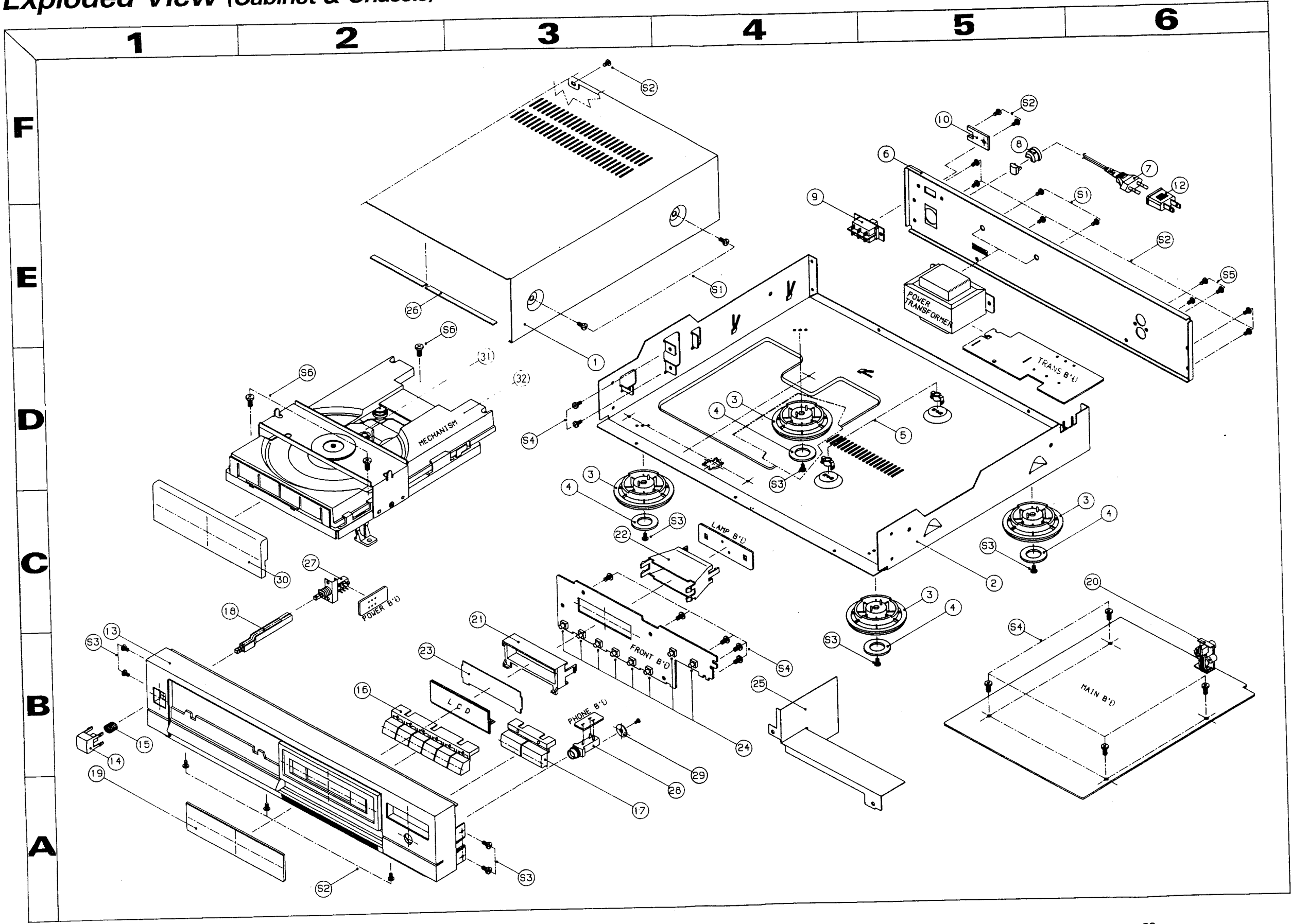
No.	Part No.	Description	Q'ty	Remark
S2	8109426061	BTTS 2.6×6 ZNY	12	
S3	8109420051	BTTS 2×5 ZNY	5	
S4	8009126031	BM 2.6×3 ZNY	2	
S5	8109626101	2BT 2.6×10 ZNY	1	
S6	8159626081	#2WPT 2.6×8 ZNY	1	
S7	8109626051	#2BT 2.6×5 ZNY	1	
S8	8199920081	WPTTB 2×8 ZNY, φ8	4	

Parts & Exploded View (Optical Pick Up Head)

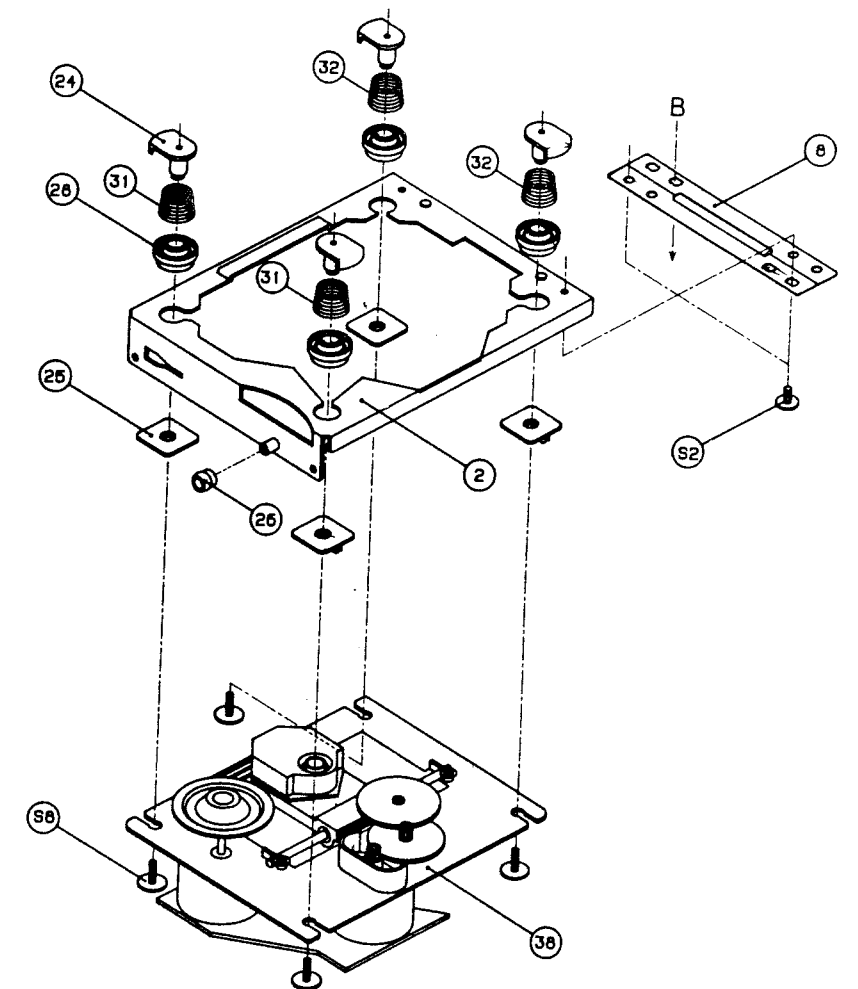
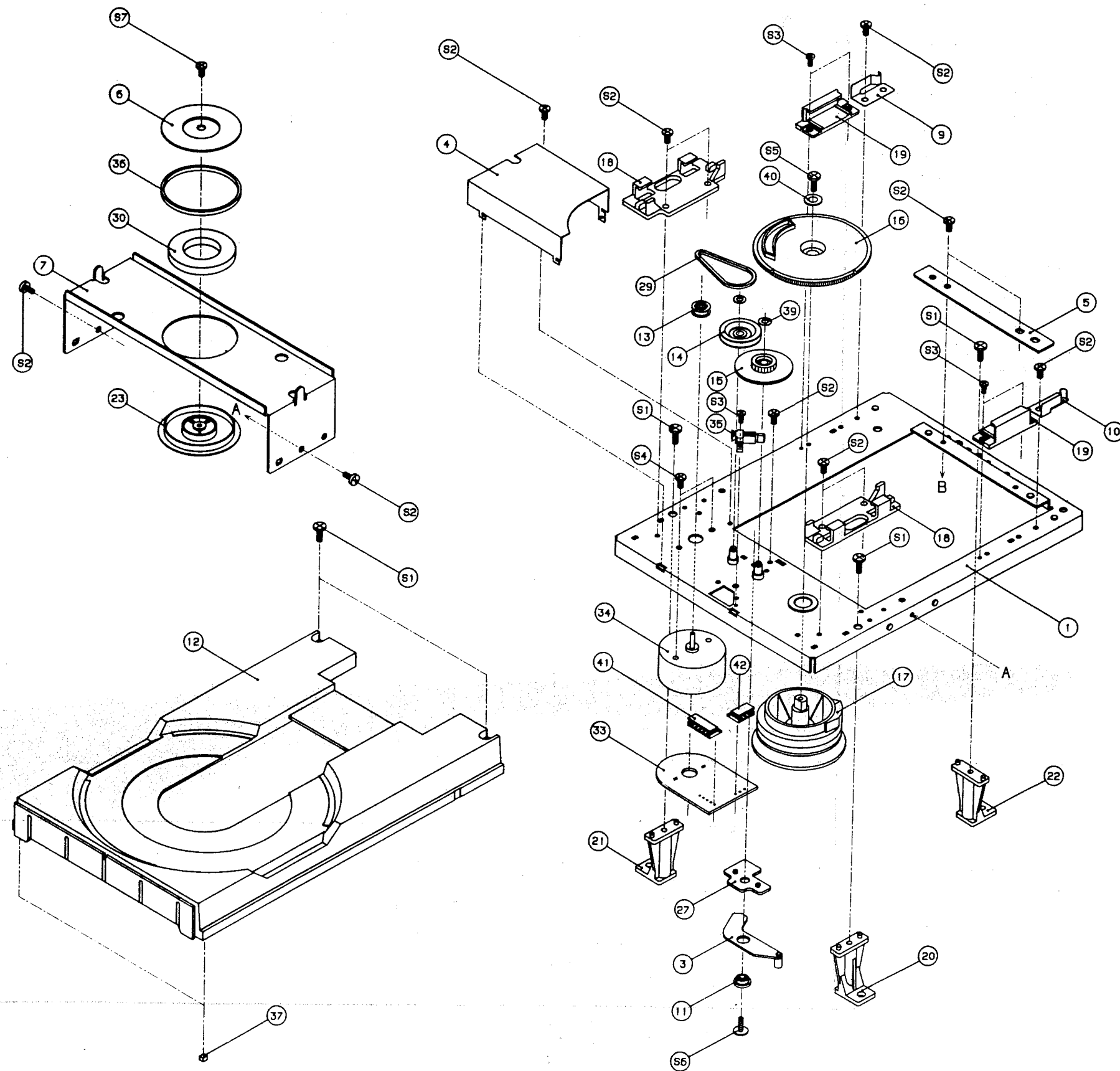
No.	Parts No.	Description	Q'ty	Position
1	491043102	SLIDE SHAFT	1	
2	884804651	KSS 150A(H) (RP)	1	
3	768578301	PTT 2 - 6	2	
4	264144302	SLIDE HOLDER	1	
5	752125525	P2 - 5	2	
6	264143401	GEAR COVER	1	
7	X26407701	MOTOR GEAR ASS'Y	1	
8	330380031	SPECIAL SCREW M1.7 - 3	2	
9	264140402	GEAR A	1	
10	264140311	GEAR B	1	
11	264140401	STP2 6 - 8	2	
12	264144811	SHAFT HOLDER	2	
13	X16413371	MOTOR ASS'Y	1	
14	157082221	LEAF SWITCH	1	
15	162292414	PCB MOTOR	1	
16	156472011	CONNECTOR PLUG 4P	4	



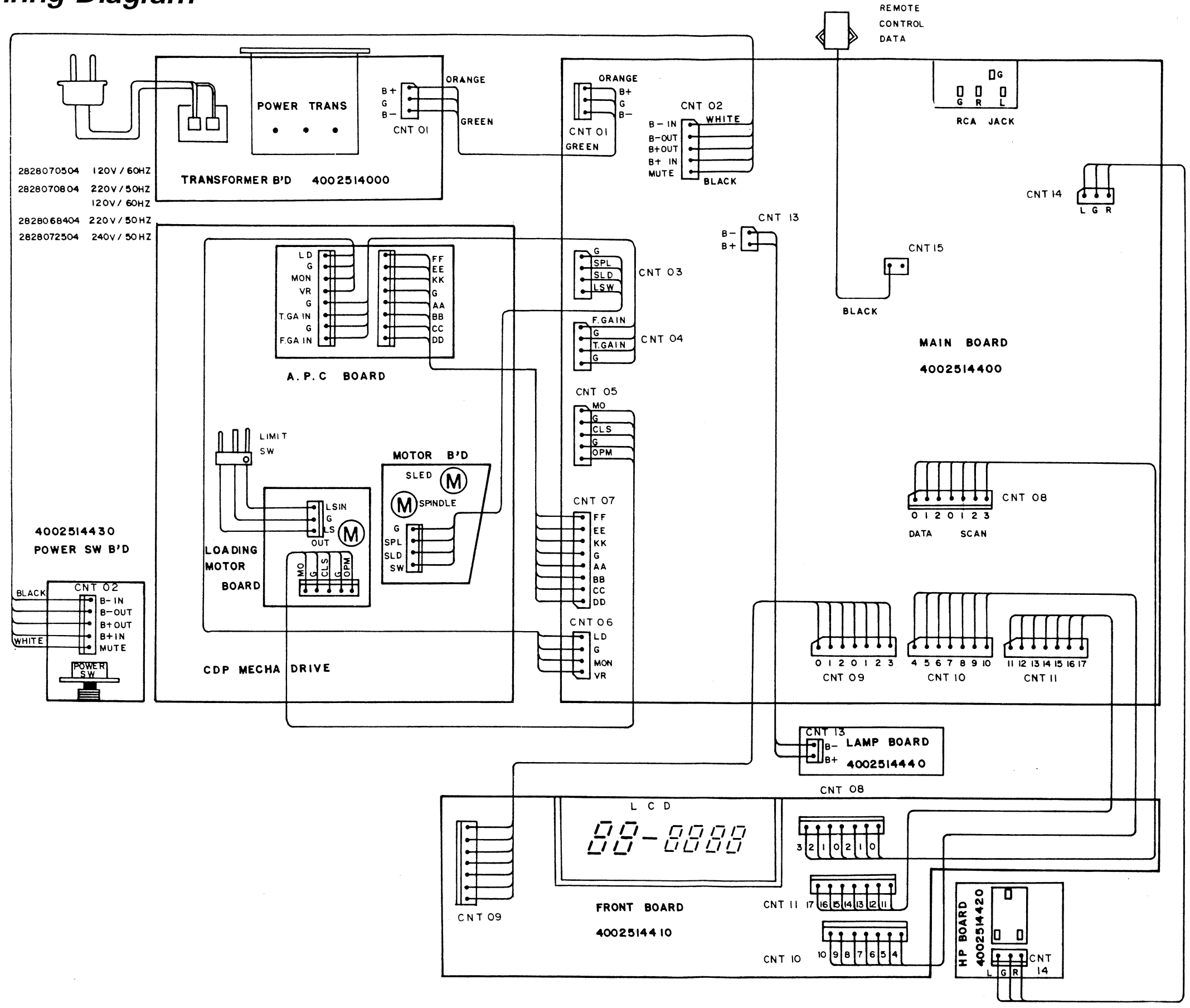
Exploded View (Cabinet & Chassis)



Exploded View (Disc Mechanism Unit)



Wiring Diagram



D

G

TRANS POWER B'D 400251400

220V (120V)

0V

AC INPUT 220V 50HZ
(EUROPE VERSION)
120V / 60HZ UL
(CSA VERSION)

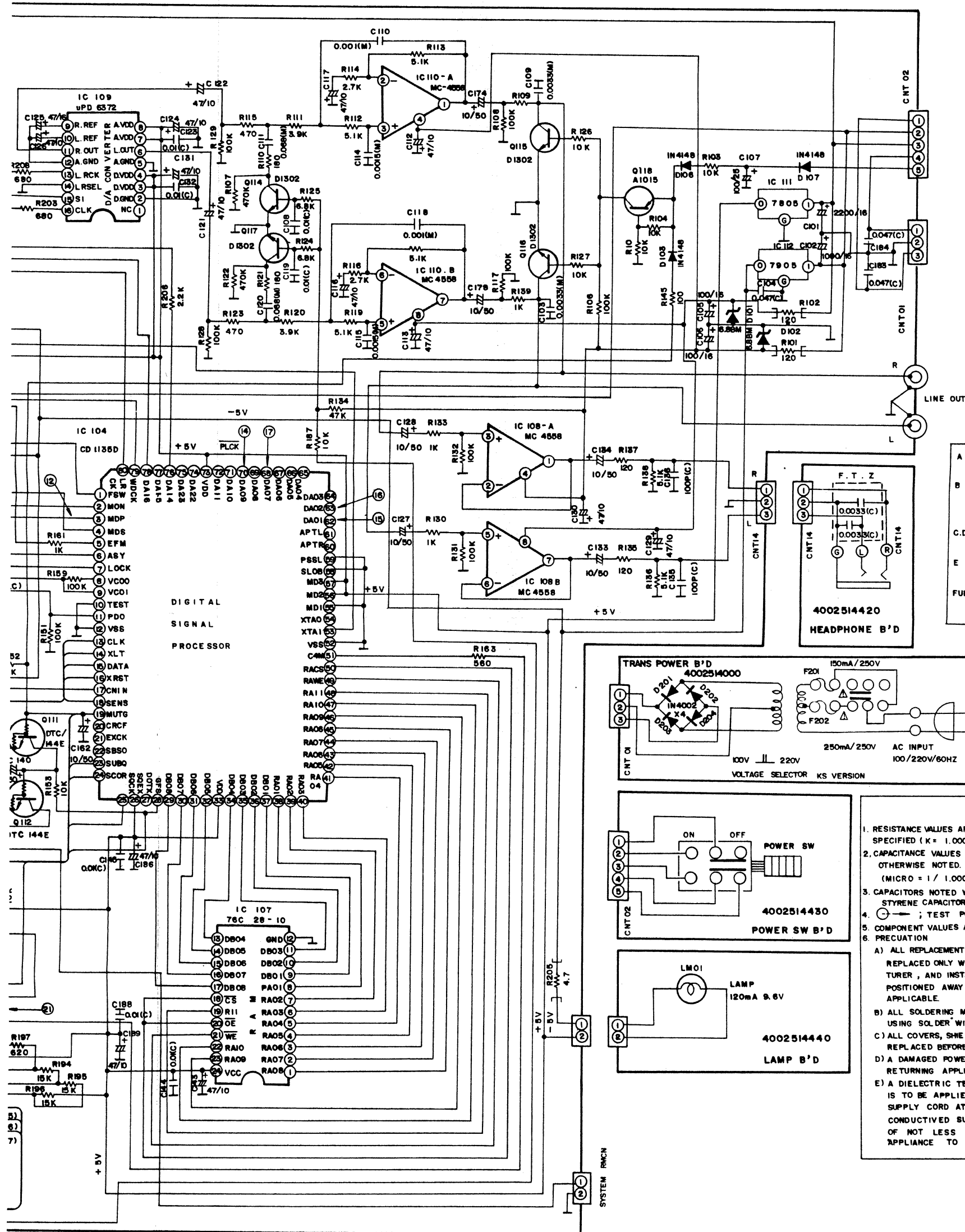
20A/250V
(20A/250V)

20A/250V
(20A/250V)

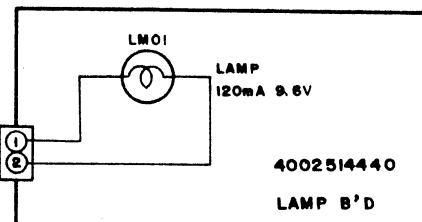
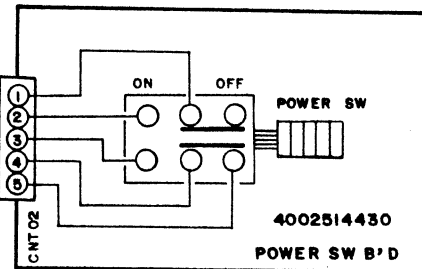
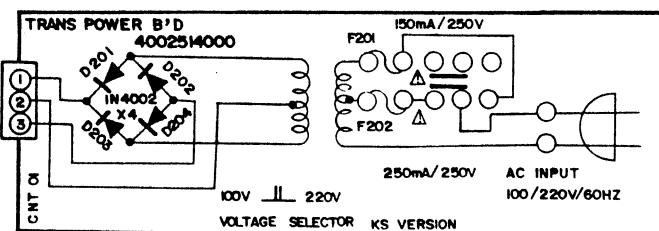
20V

1 2 3

N101

POWER TRANS VERSION

A	: 120V / 60Hz	NB 250mA
B	: 120V / 60Hz	NB 250mA
	220V / 50HZ	NB 150mA
C.D.F.	: 220V / 50HZ	T 160mA
E	: 240V / 50HZ	T 125mA
FUK.Y.	: 120V / 60HZ	T 250mA
	220V / 50HZ	T 160mA



1. RESISTANCE VALUES ARE INDICATED IN OHMS UNLESS OTHERWISE SPECIFIED (K = 1,000 , M = 1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED.
(MICRO = 1 / 1,000,000 , P = MICRO-MICROFARAD)
3. CAPACITORS NOTED WITH M ARE MYLAR CAPACITORS POLY-STYRENE CAPACITORS.
4.  ; TEST POINT
5. COMPONENT VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICED.
6. PRECAUTION
 - A) ALL REPLACEMENT COMPONENTS IDENTIFIED BY  MUST BE REPLACED ONLY WITH ORIGINAL TYPE SPECIFIED BY MANUFACTURER , AND INSTALLED AS THE ORIGINAL WITH SPACERS AND POSITIONED AWAY FROM ADJUSTMENT COMPONENTS WHERE APPLICABLE.
 - B) ALL SOLDERING MUST BE DOWN IN A PROFESSIONAL MANNER USING SOLDER WITH ROSEN CORE ONLY.
 - C) ALL COVERS, SHIELDS AND INSULATING SPACERS MUST BE REPLACED BEFORE RETURNING APPLIANCE TO CUSTOMER.
 - D) A DAMAGED POWER SUPPLY CORD MUST BE REPLACED BEFORE RETURNING APPLIANCE TO CUSTOMER.
 - E) A DIELECTRIC TEST CONSISTING OF 1080V AC 60HZ IS TO BE APPLIED BETWEEN BOTH BLADES OF THE POWER SUPPLY CORD ATTACHMENT PLUG AND THE EXPOSED CONDUCTIVE SURFACE OF THE APPLIANCE FOR A PERIOD OF NOT LESS THAN ON SECOND BEFORE RETURNING APPLIANCE TO CUSTOMER.